
THE GUN SYSTEM – 8

- The ideal velocity seismic profiling solution
- Complete air gun management
 - any type of air gun
 - field-proven gun electronics
 - QC performance monitoring of every gun on every shot
 - automatic or manual gun timing correction
 - autofire detection
 - gun aimpoint staggering
- Two to eight gun channels
- Remote communication via a 20kbit, UHF (400-500 MHz) radio link (synthesized)
- 16-bit analog signature channel
- Two serial Rs-232 input/output ports for data transmitted between locations
- Optional gun depth and air pressure monitoring
- Optional timer channels for generating external events
- Optional auxiliary signature channels (2) stored on hard disk at shooting location
- Optional on-line printer
- All electronics enclosed in a single, shock-mounted case
- For remote operation, the modules used at the source and recording sites are identical (recording location unit may add gun channels). This allows for zero offsets and at the same level multiple-source location walk-aways.
- The same software accommodates both local and remote operation
- All air gun control system data (both internally and externally entered) is stored on a hard disk for retrieval and analysis
- Allows shot cycle to be initiated from either source of rig location on any shot (ping-pong)
- Two radio privacy modes and eight fire codes allow multiple configuration set ups. For example, four different crews can operate in the same area without interference, or one recording site can control multiple source sites.
- Extensive gun performance utilities



description & application

The Gun System-8 is controlled by an embedded CPU. Operator interaction is done via a keyboard and monitor. All software is menu driven for ease of use.

The system automatically synchronizes up to eight air guns with 100-microsecond timing accuracy. It has built-in timing algorithms for sleeve, bolt and GI air guns as well as generic algorithms for custom needs.

The 16-bit signature channel allows a near field array signature to be sent to the recorder in real time to be used for QC. The signature is also stored on hard disk in digitized form for possible use as a deconvolution operator.

The internal radio allows the gun firing and remote synchronization to become tightly integrated, eliminating the need for extra equipment and interconnect cables. The radio also enables the transmission of all gun, signature, navigation, gun depth, array air pressure and user-determined data to be sent to the recorder location for inclusion in the recording system extended header.

The system can be operated locally or remotely with the shot cycle initiating from the recorder or source location (navigation points).

features and specifications

Features:

- a. High-reliability constant current drivers fire any solenoid-operated device
- b. Gun timing determined from gun transducer (active or passive), hydrophone or other device
- c. Automatic gun fire time correction
- d. Fire time control in 0.1ms increments
- e. Signature transmission on every shot
- f. Transducers air pressure and depth of gun

Connections:

- a. Air gun solenoid and transducer (8 each)
- b. Control signals: input and output for external control
- c. Recorder interface
- d. Radio antenna connection
- e. Array signature input
- f. Depth and pressure monitors
- g. Auxiliary signature channels 1-2
- h. Ports available for customer use
 - parallel
 - serial 1
 - serial 2
 - timing channels (2)
 - ethernet for remote monitor and keyboard
- i. Monitor
- j. Keyboard
- k. AC power

Radio:

UHF, 2 channel, effective power output: 10 watts

Frequency Bands (MHz):

403-415, 416-430, 430-450, 450-470, 470-480, 480-495, 495-512

Data Rate: 20 KBPS

Displays Available:

- a. Time break for all guns
- b. Operator alerts of gun misfires and autofires
- c. Analog signature (main and aux)
- d. Gun waveforms
- e. Air gun array map
- f. Depth and pressure

Data Available at Each Location:

- a. System configuration
- b. All gun time break information
- c. 16-bit signature
- d. Customer data
- e. Depth and pressure data

Data Stored at Each Location:

- a. System configuration information
- b. Gun time break information
- c. Gun status
- d. Depth and pressure
- e. Serial port data
- f. 16-bit signature
- g. Depth and pressure

Power Requirement:

85 to 264 VAC, 47 to 440 Hz (auto sensing), 2.5 amps

Dimensions

Control Module (with shock mount)	10.2"H x 17.8"W x 27.8"D (25.0 x45.2 x70.6 cm)
Monitor	14"W x 13.2"H x 15"D (35.6 x 33.5 x 38.2 cm)
Keyboard	18.2"W x 1.8"H x 6.5"D (46.2 x 4.6 x 16.5 cm)

Weight

Control Module (with shock mount)	65.0lb (29.5 kg)
Monitor	24.5 lb (11.1 kg)
Keyboard	2.0 lb (0.9 kg)

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